



US007150996B2

(12) **United States Patent**  
**Nicoli et al.**

(10) **Patent No.:** **US 7,150,996 B2**  
(45) **Date of Patent:** **Dec. 19, 2006**

(54) **STABILITY ASSESSMENT OF DISPERSIONS AND EMULSIONS**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/606,959**

(22) Filed: **Jun. 27, 2003**

(65) **Prior Publication Data**  
US 2004/0265177 A1 Dec. 30, 2004

(30) **Foreign Application Priority Data**  
Jun. 18, 2003 (WO) ..... PCT/US03/16220

(51) **Int. Cl.**  
**G01N 33/00** (2006.01)

(52) **U.S. Cl.** ..... **436/69**; 436/164; 436/176;  
422/73; 422/68.1; 73/53.01; 73/61.43; 73/61.48;  
73/61.71; 73/64.41; 73/64.43

(58) **Field of Classification Search** ..... 436/69,  
436/164, 176, 183; 422/73, 68.1; 73/53.01,  
73/61.43, 61.44, 61.48, 61.71, 64.41, 64.43  
See application file for complete search history.

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(57) **ABSTRACT**

A method and apparatus for determining the stability of dispersions and emulsions accelerates the onset of significant particle agglomeration in a sample by stressing the sample by reducing the height of the interparticle potential energy barrier between the particles. This is achieved by adding one or more of three stress factors: changing the pH of the sample to reduce the surface charge on the particles; adding an adsorbing electrolyte so that ions of the appropriate charge are adsorbed onto the surfaces of the particles to reduce the net charge on the particles; and applying a monovalent, divalent, or trivalent salt to partially screen electrostatic repulsions between the charged particles. In a preferred embodiment, the increase in agglomeration is detected with single particle detection, such as SPOS, to generate a PSD from which a figure of merit is derived. Another embodiment detects turbidity or light scattering to generate a value X indicative of the extent of agglomeration.

**77 Claims, 16 Drawing Sheets**

